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What is claimed is:

1. A stimuable phosphor screen comprising
 - a radiation-transparent substrate;
 - a stimuable phosphor layer formed on said substrate;
 - 5 - a first transparent organic film covering said stimuable phosphor layer; and
 - a second transparent film formed on said first transparent organic film,
characterized in that said second transparent film is a
10 polymeric film containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers.
- 15 2. A stimuable phosphor screen according to claim 1, further comprising an intermediate transparent organic film between said substrate and said stimuable phosphor layer.
- 20 3. A stimuable phosphor screen according to claim 1, wherein said organic film is a poly-paraxylylene film.
- 25 4. A stimuable phosphor screen according to claim 2, wherein said organic film is a poly-paraxylylene film.
- 25 5. A stimuable phoshor screen according to claim 1, wherein said substrate is an aluminum or an amorphous carbon (a-C) substrate.
- 30 6. A stimuable phoshor screen according to claim 2, wherein said substrate is an aluminum or an amorphous carbon (a-C) substrate.

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7. A stimuable phoshor screen according to claim 3, wherein said substrate is an aluminum or an amorphous carbon (a-C) substrate.

5 8. A stimuable phoshor screen according to claim 4, wherein said substrate is an aluminum or an amorphous carbon (a-C) substrate.

9. A stimuable phoshor screen according to claim 1, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

10 10. A stimuable phoshor screen according to claim 2, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

11. A stimuable phoshor screen according to claim 3, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

12. A stimuable phoshor screen according to claim 4, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

13. A stimuable phoshor screen according to claim 5, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

14. A stimuable phoshor screen according to claim 6, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

15. A stimuable phoshor screen according to claim 7, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

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16.A stimuable phoshor screen according to claim 8, wherein said storage phosphor is a binderless needle-shaped, vapor-deposited CsBr:Eu phosphor.

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17.A radiation image sensor comprising a stimuable phosphor screen according to claim 9, and an imaging device disposed in order to face said stimuable phosphor screen.

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18.A radiation image sensor comprising a stimuable phosphor screen according to claim 10, and an imaging device disposed in order to face said stimuable phosphor screen.

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19.A radiation image sensor comprising a stimuable phosphor screen according to claim 11, and an imaging device disposed in order to face said stimuable phosphor screen.

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20.A radiation image sensor comprising a stimuable phosphor screen according to claim 12, and an imaging device disposed in order to face said stimuable phosphor screen.

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21.A radiation image sensor comprising a stimuable phosphor screen according to claim 13, and an imaging device disposed in order to face said stimuable phosphor screen.

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23.A radiation image sensor comprising a stimuable phosphor screen according to claim 15, and an imaging device disposed in order to face said stimuable phosphor screen.

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24.A radiation image sensor comprising a stimuable phosphor screen according to claim 16, and an imaging device disposed in order to face said stimuable phosphor screen.

5 25.A radiation image sensor according to claim 17, wherein said imaging device is a CCD.

26.A radiation image sensor according to claim 18, wherein said imaging device is a CCD.

10 27.A radiation image sensor according to claim 19, wherein said imaging device is a CCD.

15 28.A radiation image sensor according to claim 20, wherein said imaging device is a CCD.

29.A radiation image sensor according to claim 21, wherein said imaging device is a CCD.

20 30.A radiation image sensor according to claim 22, wherein said imaging device is a CCD.

31.A radiation image sensor according to claim 23, wherein said imaging device is a CCD.

25 32.A radiation image sensor according to claim 24, wherein said imaging device is a CCD.

30 33.A method of preparing a stimuable phosphor screen or panel according to claim 1, said method comprising the steps of:
- forming a stimuable phosphor layer on a radiation-transparent substrate;

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- forming a first transparent organic film covering said needle-shaped stimuable phosphor layer; and
- forming a second transparent film formed on said first transparent organic film, wherein said second transparent film
5 is a polymeric film containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers; and wherein said organic film is a poly-paraxylylene film.

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34. A method of preparing a stimuable phosphor screen or panel according to claim 2, said method comprising the steps of:
- forming a stimuable phosphor layer on a radiation-transparent substrate;
15 - forming a first transparent organic film covering said needle-shaped stimuable phosphor layer; and
- forming a second transparent film formed on said first transparent organic film, wherein said second transparent film
20 is a polymeric film containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers; and wherein said organic film is a poly-paraxylylene film.

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35. A method of preparing a stimuable phosphor screen or panel according to claim 3, said method comprising the steps of:
- forming a stimuable phosphor layer on a radiation-transparent substrate;
30 - forming a first transparent organic film covering said needle-shaped stimuable phosphor layer; and
- forming a second transparent film formed on said first transparent organic film, wherein said second transparent film

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is a polymeric film containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers; and
5 wherein said organic film is a poly-paraxylylene film.

36.A method of preparing a stimuable phosphor screen or panel according to claim 4, said method comprising the steps of:

- 10 - forming a stimuable phosphor layer on a radiation-transparent substrate;
- forming a first transparent organic film covering said needle-shaped stimuable phosphor layer; and
- forming a second transparent film formed on said first
15 transparent organic film, wherein said second transparent film is a polymeric film containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers; and
20 wherein said organic film is a poly-paraxylylene film.

37.A method according to claim 33, said method comprising an additional step of forming a third transparent film layer, wherein said third transparent film layer is a polymeric film
25 covering said second transparent film layer.

38.A method according to claim 34, said method comprising an additional step of forming a third transparent film layer, wherein said third transparent film layer is a polymeric film
30 covering said second transparent film layer.

39.A method according to claim 35, said method comprising an additional step of forming a third transparent film layer,

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wherein said third transparent film layer is a polymeric film covering said second transparent film layer.

40. A method according to claim 36, said method comprising an additional step of forming a third transparent film layer, wherein said third transparent film layer is a polymeric film covering said second transparent film layer.

41. A method according to claim 37, wherein said third transparent film layer is a polymeric film layer containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers.

42. A method according to claim 38, wherein said third transparent film layer is a polymeric film layer containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers.

43. A method according to claim 39, wherein said third transparent film layer is a polymeric film layer containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming polymers.

44. A method according to claim 40, wherein said third transparent film layer is a polymeric film layer containing polymers selected from the group consisting of silazane and siloxazane type polymers, mixtures thereof and mixtures of said silazane or siloxazane type polymers with compatible film-forming

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polymers.